

McGraw-Hill DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS

Third Edition

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tion of a target with relation to the battery, and the determination of a future position upon which to direct the fire.

position firing [ORD] A method of defensive gunnery used by bombers, especially during World War II, in which definite amounts of deflection are prescribed for firing at attacking fighter planes.

position indicator [ENG] An electromechanical dead-reckoning computer, either an air-position indicator or a ground-position indicator.

positioning [MECH ENG] A tooling function concerned with manipulating the workpiece in relationship to the working tools.

positioning action [CONT SYS] Automatic control action in which there is a predetermined relation between the value of a controlled variable and the position of a final control element.

positioning band [ORD] A metal band on some recoilless ammunition, placed to ensure the proper positioning of the round inside the chamber and tube.

position line See line of position.

position operator [QUANT MECH] The quantum-mechanical operator corresponding to the classical position variable of a particle.

position pulse See commutator pulse.

position report [NAV] A radio message containing specified information regarding the position and progress of a craft.

position representation [QUANT MECH] A representation in which the state functions are eigenfunctions of the position operator. Also known as Schrödinger representation.

position sensor [ENG] A device for measuring a position and converting this measurement into a form convenient for transmission. Also known as position transducer.

position telemetering [ENG] A variation of voltage telemetering in which the system transmits the measurand by positioning a variable resistor or other component in a bridge circuit so as to produce relative magnitudes of electrical quantities or phase relationships.

position transducer See position sensor.

position vector [MATH] The position vector of a point in euclidean space is a vector whose length is the distance from the origin to the point and whose direction is the direction from the origin to the point. Also known as radius vector.

positive [ELEC] Having fewer electrons than normal, and hence having ability to attract electrons. [GRAPHICS] Having the same rendition of light and shade as in the original scene. [MATH] Having value greater than zero.

positive acceleration [MECH] 1. Accelerating force in an upward sense or direction, such as from bottom to top, or from seat to head; 2. The acceleration in the direction that this force is applied.

positive afterimage [PHYSIO] An afterimage persisting after the eyes are closed or turned toward a dark background, and of the same color as the stimulating light.

positive angle [MATH] The angle swept out by a ray moving in a counterclockwise direction.

positive area See positive element.

positive axis [MATH] The segment of an axis arising from a cartesian coordinate system which is realized by positive values of the coordinate variables. [METEOROL] In tropical synoptic analysis, a locus of maximum streamline curvature in an easterly wave; used primarily in the analysis of waves that span the equatorial trough (equatorial waves); a positive axis corresponds to a trough line in the Northern Hemisphere and a ridge line in the Southern Hemisphere.

positive bias [ELECTR] A bias such that the control grid of an electron tube is positive with respect to the cathode.

positive birefringence [OPTICS] Birefringence in which the velocity of the ordinary ray is greater than that of the extraordinary ray.

positive charge [ELEC] The type of charge which is possessed by protons in ordinary matter, and which may be produced in a glass object by rubbing with silk.

positive clutch [MECH ENG] A clutch designed to transmit torque without slip.

positive column [ELECTR] The luminous glow, often striated, that occurs between the Faraday dark space and the anode in a glow-discharge tube. Also known as positive glow.

positive crystal [OPTICS] 1. Uniaxial anisotropic crystal having the ordinary index of refraction greater than the extraordinary index. 2. Biaxial anisotropic crystal having the intermediate index of refraction beta closer in value to alpha, and with Z the acute bisectrix.

positive definite [MATH] 1. A square matrix A of order n is positive definite if

$$\sum_{i,j=1}^n A_{ij} x_i \bar{x}_j > 0$$

for every choice of complex numbers x_1, x_2, \dots, x_n , not all equal to 0, where \bar{x}_j is the complex conjugate of x_j . 2. A linear operator T on an inner product space is positive definite if $\langle Tu, u \rangle$ is greater than 0 for all nonzero vectors u in the space.

positive derail [MIN ENG] A device installed in or on a mine track to derail runaway cars or trips.

positive-displacement compressor [MECH ENG] A compressor that confines successive volumes of fluid within a closed space in which the pressure of the fluid is increased as the volume of the closed space is decreased.

positive-displacement meter [ENG] A fluid quantity meter that separates and captures definite volumes of the flowing stream one after another and passes them downstream, while counting the number of operations.

positive-displacement pump [MECH ENG] A pump in which a measured quantity of liquid is entrapped in a space, its pressure is raised, and then it is delivered; for example, a reciprocating piston-cylinder or rotary-vane, gear, or lobe mechanism.

positive draft [MECH ENG] Pressure in the furnace or gas passages of a steam-generating unit which is greater than atmospheric pressure.

positive drive belt See timing belt.

positive electrode See anode.

positive electron See positron.

positive element [GEOGR] A large structural feature of the earth's crust characterized by long-term upward movement (uplift, emergence) or subsidence less rapid than that of adjacent negative elements. Also known as archibole; positive area.

positive estuary [HYD] An estuary in which there is a measurable dilution of seawater by land drainage.

positive feedback [CONT SYS] Feedback in which a portion of the output of a circuit or device is fed back in phase with the input so as to increase the total amplification. Also known as reaction (British usage); regeneration; regenerative feedback; retroaction (British usage).

positive glow See positive column.

positive-grid oscillator See retarding-field oscillator.

positive image [GRAPHICS] A picture as normally seen on a television picture tube or in a photograph, having the same rendition of light and shade as in the original scene.

positive interference [GEN] The reduction, by one crossover exchange, of the likelihood of another crossover in its vicinity.

positive ion [CHEM] An atom or group of atoms which by loss of one or more electrons has acquired a positive electric charge; occurs on ionization of chemical compounds as H^+ from ionization of hydrochloric acid, HCl .

positive-ion sheath [ELECTR] Collection of positive ions on the control grid of a gas-filled triode tube.

positive landform [GEOL] An upstanding topographic form, such as a mountain, hill, plateau, or cinder cone.

positive logic [ELECTR] Pertaining to a logic circuit in which the more positive voltage (or current level) represents the 1 state; the less positive level represents the 0 state.

positive meniscus lens [OPTICS] A lens having one convex (bulging) and one concave (depressed) surface, with the radius of curvature of the convex surface smaller than that of the concave surface.

positive modulation [ELECTR] In an amplitude-modulated television system, that form of television modulation in which an increase in brightness corresponds to an increase in transmitted power.

positive mold [ENG] A plastics mold designed to trap all of the molding resin when the mold closes.

positive motion [MECH ENG] Motion transferred from one machine part to another without slippage.

positive movement [GEOL] 1. Uplift or emergence of the earth's crust relative to an adjacent area of the crust. 2. A relative rise in sea level with respect to land level.

positive ore [MIN ENG] Ore exposed on four sides in blocks of a size variously prescribed.

positive phase sequence [ELEC] The phase sequence that